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Quality Management Project

Electronically Enhanced Ordering of Texture-Modified Diets (TMDs) can lead to increased nutritional status, better clinical outcomes, and higher patient satisfaction in the acute care setting – A Randomized, Single-Blind, Pair-Matched Clinical Trial

Dysphagia, a discomfort or difficulty in swallowing, occurs in approximately 8% of the global population. In the developed world, the prevalence of dysphagia is increasing as the population ages with neurological diseases such as stroke, Parkinson's disease (PD) and dementia being the most common causes.¹ Speech Language Pathologists (SLPs), clinicians who specialize in diagnosing and treating dysphagia, often prescribe texture-modified diets (TMDs) in order to minimize the increased risk of aspiration and associated complications such as lung tissue damage and pneumonia.

It has been well established in the literature that dysphagia in the acute care setting leads to unintentional weight loss and hospital acquired malnutrition.¹ Patients prescribed a therapeutic diet have various restrictions such as low fat and low sodium in a heart healthy diet and the limiting of carbohydrates to 45 g per meal in a carbohydrate controlled diet while other patients may be unrestricted. However, any diet may involve texture-modification for an underlying dysphagia condition.

Hospital foodservice is in a unique position to directly impact dietary intake in the hospitalized dysphagia population. Enhancing patient satisfaction results in increased food intake, a decrease in malnutrition risk and improved clinical outcomes.² Another strategy to improve the patient experience is by adopting electronic bedside meal ordering systems (eBMOS) and creating elaborately descriptive menu designs that have more patient appeal. When patient-foodservice interactions are concise, accurate and meet patient expectations dietary intake is increased and mealtime enjoyment enhanced.

In addition, hospital foodservice is a major point of customer service and can influence a patients' perception of their entire hospital stay.³ In a systematic review of evidence-based hospital foodservices strategies, Osman *et al.* found five intervention strategies that enhance patients' food intake, satisfaction and nutritional status: new food service system implementation, modification of menus, using a multidisciplinary approach to nutrition care, protected mealtime intervention programs, and attractive meal presentation.⁴ Using a combination of these strategies will positively impact rates of malnutrition of the dysphagia population in the acute care setting.

Currently, dysphagia patients at Ascension Seton Williamson County (ASWC) do not have access to TMD educational materials explaining how foods are prepared to meet prescribed texture needs. Patients only have access to traditional menus (TMs) of regular and therapeutic diets, but there is no "menu" for how texture modification is applied to any diet. Technically, all foods can have their texture modified to comply with the prescription, but not all foods are particularly palatable in a texture modified form. It is permissible, but not encouraged, for patients to bring their own foods that can be texture-modified in the kitchen.

Hypothesis:

Bridging the gap in TMD menu options using an eBMOS, modifying menu options, enhancing menu appeal and creating a positive patient-foodservice interaction that sets and meets patient expectations should improve nutritional status, enhance clinical outcomes and increase patient satisfaction in the acute care dysphagia patient population.

Experimental Design:

A randomized single-blind pair-matched clinical trial will be implemented. Patients will be randomly selected to the intervention arm or the current standard of care control arm, TM with phone contact to foodservice. Patients can be on any TMD (nectar thick, pureed, etc.) and any kind of

therapeutic diet (carbohydrate controlled, renal, heart healthy, etc.) or on an unrestricted diet that requires texture modification. Patients are allowed from all floors except the ICU. All patients must be of self-select status, the ability to choose their own menu options, and not non-select where the kitchen chooses a meal to send to the floor. The control arm patients will be age, gender and diet-type matched to the intervention arm patients. The specific type of texture modification does not have to be matched (carbohydrate controlled minced and moist can be pair-matched with carbohydrate controlled pureed). Data, time and accuracy metrics will be collected via the eBMOS, and participating RNs will chart daily weights and percentage of meals consumed. An RD will perform a nutrition focused physical examination (NFPE) at admit and before discharge recording the findings. Administration of a standardized satisfaction survey will be emailed to the patient within 24 hours of discharge. Sample size for each arm n = 100.

Experimental Arm Intervention:

Patients are made fully aware of the dysphagia diagnosis and that they have been prescribed a TMD. Patients assigned to the intervention arm can either use a foodservice provided tablet that has the eBMOS system installed or download the app to their electronic device. The app is linked to the EMR and foodservice's My Dining software enabling cross referencing of diet order including texture. The software would present to the patient foods and textures that are permissible eliminating patient ambiguity. The electronic menu would be enhanced with professional photos and creative descriptions specific for the patient's level of dysphagia. Assistance with using the app is permitted. The app automatically records time, location and selection. If the patient elects, the app will provide updates via text to their cell phone or tablet for different stages of preparation: when the meal has been prepared, when it left the kitchen, when it will be delivered. Accuracy of the order should be checked by foodservice quality assurance staff before delivering to the floor.

Control Arm:

Patients are made fully aware of the dysphagia diagnosis and that they have been prescribed a TMD. Each patient receives a TM of their prescribed diet that does not include which foods are permissible for the level of dysphagia. Patients' phone-in their order and order accuracy is reliant upon the foodservice operators checking against the My Dining software. Accuracy of the order should be checked by foodservice quality assurance staff before delivering to the floor.

Monitoring and Evaluation:

Patients' daily weight (using standing weight or accurately measured bed weight), number of meals ordered, percentage of meals consumed, accuracy of foods delivered and a standardized patient satisfaction survey regarding overall food service experience during length of stay (LOS) will be measured. An NFPE performed by an RD at admit and before discharge will determine nutrition status. Maintenance of lean body mass (LBM) will be estimated using the appropriate gender specific Boer formula.

Expected Outcomes:

Those patients in the intervention arm will have lower incidence of malnutrition, better clinical outcomes, and increased patient satisfaction.

References:

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